Yakima River Watersheds – WRIA's 37, 38, and 39

Low flows in the Lower Yakima River below Parker Dam and during the spring out-migration has been identified as one of the most limiting factors to salmonid production in the Yakima River Basin. Low flows are associated with high temperatures and predation which result in significant mortality, especially during years with below normal snow pack and associated spring flows. Juvenile steelhead and fall chinook tend to be affected to a greater degree than spring chinook due to their later migration timing.

Low flows during spawning and incubation periods for spring chinook can be significant during some years. If flows are too high during spawning there may be insufficient storage remaining in the reservoirs to support incubation flows during the fall months prior to fall and winter precipitation and an increase in instream flow. Acquisition of sufficient flows to ensure successful spawning and incubation would provide significant benefit, especially during drought years.

In addition to low main stem flows, there are several tributaries in which surface water is diverted to the extent that rearing, migration, and spawning habitat is significantly affected. In some instances, entire stream flows are diverted for agricultural purposes.

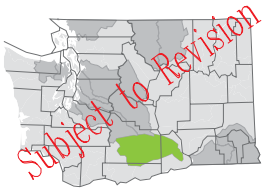
Within WRIA 39 of the upper Yakima Basin , Taneum Creek, Manastash Creek, Teanaway River, Big Creek, Little Creek, Swauk Creek, and Tributaries of the Wilson/Cherry Creek complex and others, all suffer from low flows to the extent that the salmonid production potential of these streams is significantly depressed. While most of the diversions are gravity surface diversions with associated diversion structures, some of the diversions are pump stations. With few exceptions, most of these diversions are for agricultural purposes. While the Bureau of Reclamation has been involved in flow restoration efforts in the Teanaway River, to the extent that flows are less limiting, summer flows in Manastash, Big, and Swauk Creeks continue to be very low, or non-existent.

Within WRIA 37 of the lower Yakima River Basin, low flows in the main stem during the spring and summer months are most limiting to salmonids, as discussed above. There are also some tributaries within this reach in which low flows are limiting. Ahtanum Creek, Blue Slough, Toppenish Creek, and Simcoe Creek suffer low flows due to irrigation diversions. It is difficult to assess the historic base flows of many of the smaller tributaries in the lower Yakima because they are supplemented by irrigation returns or used for controlled spill purposes. Ironically, some of the tributary flows are highest during the irrigation season and lowest during the late winter months. False attraction of adults is a problem in some of the tributaries which receive return flows from water diverted from the Yakima River.

While stream flows are not as limiting within WRIA 38, there are some exceptions. Cowiche Creek and Rattlesnake Creek suffer from low flows and fish passage barriers during the irrigation season. There is opportunity and local support to provide alternative water from the Tieton Irrigation District for water right holders in Cowiche Creek. Cowiche Creek and its tributaries have significant production potential for salmonids and extensive habitat which is currently inaccessible due to low flows. Flow is somewhat less limiting in lower Rattlesnake

Creek. However, the two gravity diversions can result in migration delays for spring chinook and bull trout in some years. Low flows for migration and spawning in the Lower Naches River appear to have largely been resolved by the recent purchase of the water rights associated with PP & L's Wapatox Power Plant by the Bureau of Reclamation and Department of Ecology. Low flow problems do exist in the Tieton and Bumping Rivers, but these flows are likely be better addressed through FERC licensing or negotiations regarding BOR project operations as storage dams exist on both of these streams.

Stream Flow Prioritization: Lower Yakima WRIA 37



- US Forest Service
- US Wildlife Refuge
- US Parks/Recreation
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- Bureau of Land Management
- US Dept. Defense/Energy
- Wa. Dept. of Fish & Wildlife
- Wa. Dept. of Naural Reasources
- State School/Hospital/Prison
- Wa. Parks & Recreation
- City/County Watershed/Park
- Tribal Lands
- Incorporated City

- Low priority stream
- Medium priority stream
- High priority stream
- Salmon/Bull Trout Spawning/Rearing area
- Other streams
- Canal/ditch/pipe

- USGS Stream Flow Gage
- Ecology Stream Flow Gage
- Water Right Purchase

- County
- Highway
- Local Paved Roads

WDNR/Ecology - Major Public Lands 2002 100k
WDFW/Ecology - Hydrography, 2000 100k
Ecology - WRIA, 2002 24K
WDOT - Transportation, 2001 24K
WDFW - Stream Flow Prioritization 2002
WDFW - Spawning/Rearing Areas 2002 100k
USGS/Ecology - Stream Gages 1:100k

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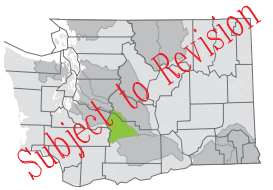
Stream Flow Prioritization: Naches WRIA 38



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WDFW - Stream Flow Prioritization 2002
WDFW - Spawning/Rearing Areas 2002 100k
USGS/Ecology - Stream Gages 1:100k

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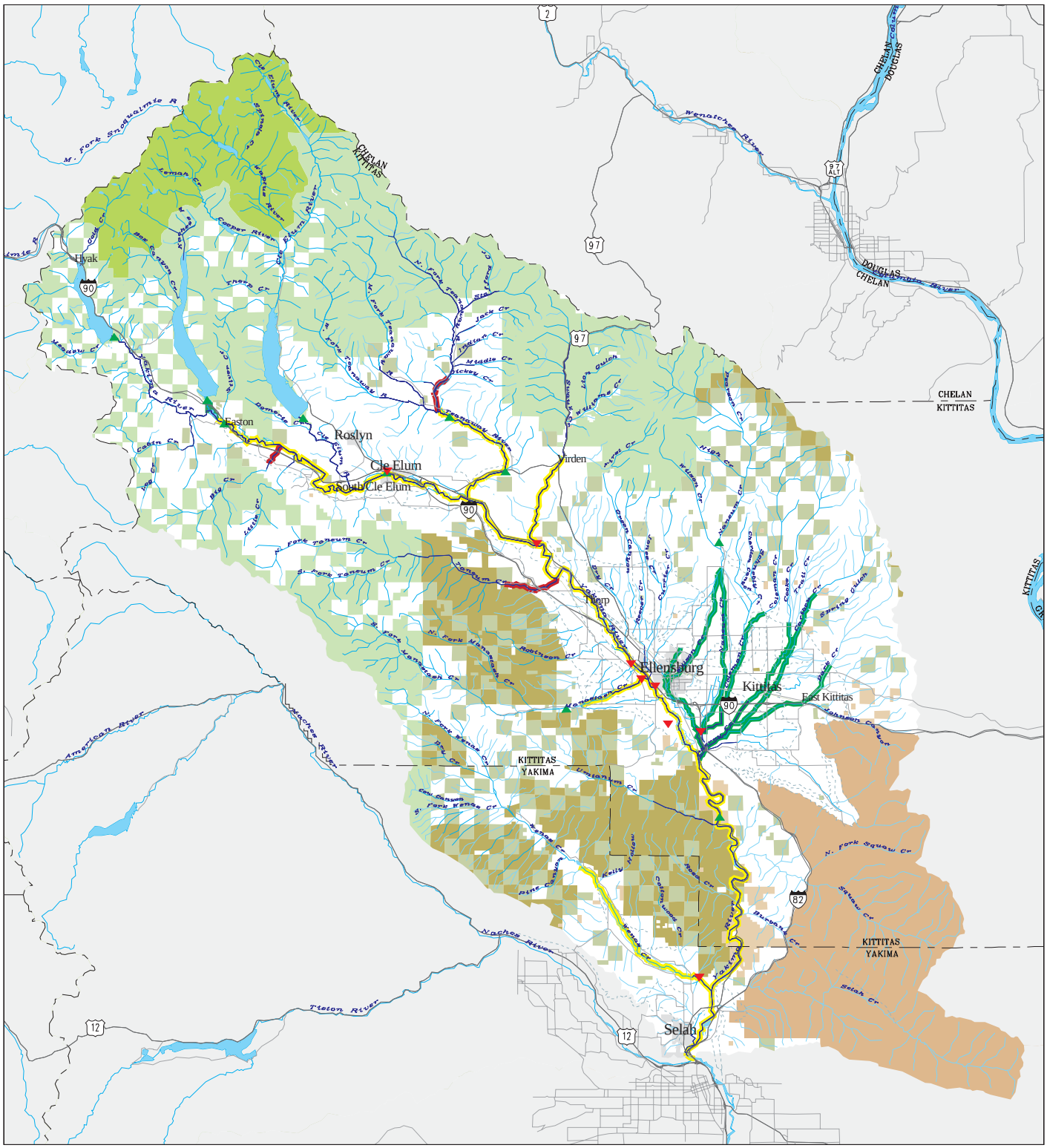

Stream Flow Prioritization: Upper Yakima WRIA 39

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Miles
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Subject to Revision

WDNR/Ecology - Major Public Lands 2002 100k
WDFW/Ecology - Hydrography, 2000 100k
Ecology - WRIA, 2002 24K
WDOT - Transportation, 2001 24K
WDFW - Stream Flow Prioritization 2002
WDFW - Spawning/Rearing Areas 2002 100k
USGS/Ecology - Stream Gages 1:100k